

MEMORANDUM

SUBJECT: Endangered Species Act Considerations for the EPA's Approval of Revisions to Colorado WQS in Regulation 34 and 35

Adopted by the Colorado Water Quality Control Commission on August 7, 2017

FROM: Johanna Miller, Director
Clean Water Program



TO: The File

DATE: **OCT 17 2017**

This memorandum documents the U.S. Environmental Protection Agency Region 8's (EPA) determination that its decision to approve revisions to Colorado's WQS (WQS) adopted by Water Quality Control Commission (Commission) on August 7, 2017 pursuant to Clean Water Act (CWA) Section 303(c), subject in part to completion of Endangered Species Act (ESA) consultation with the U.S. Fish and Wildlife Service (the USFWS or the Service), is consistent with Section 7(d) of the ESA. This memorandum also discusses the bases for the EPA's conclusions that approval of certain revisions will not cause impacts of concern to federally-listed endangered or threatened species or their designated critical habitat, and approval of other revisions is not subject to ESA consultation either because the EPA does not have discretion to alter its action based on listed species and/or designated critical habitat information or because the action does not affect listed species and/or designated critical habitat.

Section 7(a)(2) of the ESA requires federal agencies, in consultation with the National Oceanic and Atmospheric Administration National Marine Fisheries Service (NMFS) and/or the USFWS, to ensure that any action they authorize, fund or carry out is not likely to jeopardize the continued existence of federally-listed threatened or endangered species, or result in the destruction or adverse modification of designated critical habitat of such species. 16 U.S.C. § 1536(a)(2). Consistent with relevant implementing regulations, Section 7 requirements only apply to actions in which there is discretionary federal involvement or control. 50 C.F.R. § 402.03. Also, under the regulations, consultation is only required for actions that "may affect" listed species or critical habitat. 50 C.F.R. § 402.14. Consultation is not required where the action has no effect on such listed species or designated critical habitat.

I. BACKGROUND INFORMATION AND RATIONALE

The WQS revisions addressed in this letter include site-specific changes to water quality standards for several of Colorado's basin-specific regulations (Regulations 34 and 35). The adopted new and revised water quality criteria that are the subject of the action are scientifically defensible, well supported by the

record and consistent with CWA requirements. A detailed rationale for EPA's proposed action is included in the action letter.

The EPA's approval of Colorado's WQS is, in part, subject to Section 7(a)(2) consultation requirements under the Endangered Species Act (ESA). Section 7(a)(2) of the ESA states that "each federal agency ... shall ...insure that any action authorized, funded or carried out by such agency is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined to be critical..." However, certain parts of the approval of the new or revised WQS will have no effect on listed or proposed, threatened, or endangered species, or are otherwise not subject to ESA consultation. For these actions, no consultation with the U.S. Fish and Wildlife Service is required.

The EPA has a duty under CWA Section 303(c) to complete its WQS action in a timely manner. In acting on the state's WQS today, the EPA is fulfilling its legal obligations under this provision of the CWA. In addition, there is a practical benefit to the environment associated with timely completion of this action. This will facilitate effluent limits for NPDES permitting, identification of impaired waters and timely development of TMDLs. The EPA has concluded that there is an overall benefit to the environment associated with timely approval, prior to completion of ESA consultation, of the WQS. The ESA Section 7(a)(2) consultation process with the Service was initiated by an October 16, 2017 email sent to Laura Archuleta and Barb Osmundson of the U.S. Fish and Wildlife Service. Should the consultation process with the Service identify information regarding impacts on listed species or designated critical habitat that supports amending the EPA's approval, the EPA will, as appropriate, revisit and amend its approval decision for these new or revised WQS.

The EPA's approval decision is consistent with ESA Section 7(d) because it does not foreclose either the formulation by the Service, or the implementation by the EPA, of any alternatives that might be determined in the consultation to be needed to comply with Section 7(a)(2). By approving the standards "subject to the results of consultation under Section 7(a)(2)," the EPA has expressly retained the discretion to revise its approval decision if the consultation identifies deficiencies in the standards requiring remedial action by the EPA. The EPA retains the full range of options available under CWA Section 303(c) for ensuring WQS are environmentally protective. The EPA can, for example, work with the state to ensure that the state revises its WQS as needed to ensure protection of listed species. In the unlikely event that the Service determines that disapproval of the state's WQS is necessary to avoid jeopardy to listed species or the adverse modification or destruction of designated critical habitat, the EPA retains the authority to revise its decision from an approval to a disapproval. After such a disapproval, the EPA must promptly promulgate superseding federal WQS if the state fails to revise its WQS within 90 days. See CWA Sections 303(c)(3) and (4). The EPA's approval action, therefore, is neither irreversible nor irretrievable. In addition, the EPA does not believe there will be impacts of concern to listed species or their designated critical habitat during the period prior to the conclusion of ESA consultation.

II. LISTED SPECIES AND DESIGNATED CRITICAL HABITAT

Table 1 below provides the list of threatened, endangered and candidate species (T&E) known to occur or expected to occur in Colorado. The species list used to populate the table was obtained from the Service's Environmental Conservation Online System (ECOS) on August 7, 2017. Critical habitat for aquatic or aquatic dependent species has been designated in Colorado for bonytail chub, Colorado pikeminnow, humpback chub, razorback sucker, New Mexico meadow jumping mouse, Preble's meadow jumping mouse, southwestern willow flycatcher, and proposed critical habitat for the yellow-billed cuckoo.¹

Table 1: Threatened, endangered and candidate species (T&E) known to occur or expected or occur in Colorado.

Status	Common Name (Scientific Name)	
Aquatic		
E	Chub, Bonytail (<i>Gila elegans</i>)	
E	Chub, Humpback Entire (<i>Gila cypha</i>)	
C	Darter, Arkansas (<i>Etheostoma cragini</i>)	
E	Pikeminnow, Colorado Entire, except EXPN (<i>Ptychocheilus lucius</i>)	
C	Snowfly, Arapahoe (<i>Arsapnia arapahoe</i>)	
E	Sturgeon, Pallid (<i>Scaphirhynchus albus</i>)	
E	Sucker, razorback Entire (<i>Xyrauchen texanus</i>)	
T	Trout, Greenback Cutthroat Entire (<i>Oncorhynchus clarki stomias</i>)	
Aquatic Dependent		
T	Butterfly plant, Colorado (<i>Gaura neomexicana</i> var. <i>coloradensis</i>)	
E	Crane, Whooping (<i>Grus americana</i>)	
T	Cuckoo, yellow-billed Western U.S. DPS (<i>Coccyzus americanus</i>)	
E	Flycatcher, southwestern willow Entire (<i>Empidonax traillii extimus</i>)	
T	Ladies'-tresses, Ute (<i>Spiranthes diluvialis</i>)	
E	Mouse, New Mexico meadow jumping (<i>Zapus hudsonius luteus</i>)	
T	Mouse, Preble's meadow jumping wherever found (<i>Zapus hudsonius preblei</i>)	
T	Plover, piping except Great Lakes watershed (<i>Charadrius melodus</i>)	
E	Tern, least interior pop. (<i>Sterna antillarum</i>)	
Terrestrial		
E	Butterfly, Uncompahgre fritillary Entire (<i>Boloria acrocynema</i>)	
E	Ferret, Black-footed (<i>Mustela nigripes</i>)	
T	Lynx, Canada Contiguous U.S. DPS (<i>Lynx canadensis</i>)	
T	Owl, Mexican spotted Entire (<i>Strix occidentalis lucida</i>)	
T	Sage-grouse, Gunnison entire (<i>Centrocercus minimus</i>)	
T	Skipper, Pawnee montane Entire (<i>Hesperia leonardus montana</i>)	
T	Beardtongue, Parachute (<i>Penstemon debilis</i>)	
E	Beardtongue, Penland (<i>Penstemon penlandii</i>)	

¹<http://ecos.fws.gov/ecp/>

Status	Common Name (Scientific Name)
T	Bladderpod, Dudley Bluffs (<i>Lesquerella congesta</i>)
T	Cactus, Colorado hookless (<i>Sclerocactus glaucus</i>)
E	Cactus, Knowlton's (<i>Pediocactus knowltonii</i>)
T	Cactus, Mesa Verde (<i>Sclerocactus mesae-verdae</i>)
C	Milkvetch, Chapin Mesa (<i>Astragalus schmollii</i>)
E	Milkvetch, Mancos (<i>Astragalus humillimus</i>)
E	Milkvetch, Osterhout (<i>Astragalus osterhoutii</i>)
C	Milkvetch, Skiff (<i>Astragalus microcymbus</i>)
T	Mustard, Penland alpine fen (<i>Eutrema penlandii</i>)
T	Orchid, Western Prairie Fringed (<i>Platanthera praeclara</i>)
T	Phacelia, DeBeque (<i>Phacelia submutica</i>)
E	Phacelia, North Park (<i>Phacelia formosula</i>)
E	Skyrocket, Pagosa (<i>Ipomopsis polyantha</i>)
T	Twinpod, Dudley Bluffs (<i>Physaria obcordata</i>)
E	Wild buckwheat, clay-loving (<i>Eriogonum pelinophilum</i>)

ENDANGERED (E) - Any species that is in danger of extinction throughout all or a significant portion of its range.

THREATENED (T) - Any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

CRITICAL HABITAT, PROPOSED CRITICAL HABITAT (CH, PCH) - The specific areas (i) within the geographic area occupied by a species, at the time it is listed, on which are found those physical or biological features (I) essential to conserve the species and (II) that may require special management considerations or protection; and (ii) specific areas outside the geographic area occupied by the species at the time it is listed upon determination that such areas are essential to conserve the species.

Below we provide a brief summary of the occurrence, habitat needs, and critical habitat designations for the listed aquatic and aquatic-dependent species. The species-specific information was primarily obtained from the U.S. FWS species profile pages available on ECOS.²

Aquatic Species

Arapahoe Snowfly (Candidate)

The final petition to list the Arapahoe Snowfly as an endangered species was published in 2011. The insect is a winter stonefly (family Plecoptera) which generally require cold, clean, and well oxygenated streams. The Arapahoe snowfly is known historically only from two small tributaries of the Cache la Poudre River in the Front Range of Northern Colorado: Young Gulch and Elkhorn Creek in the Canyon Lakes Ranger District of the Roosevelt National Forest. However, new surveys completed in 2013 and 2014 post fires and floods identified the Arapahoe snowfly in seven new localities, including Elkhorn Creek, Sheep Creek (a tributary of the Big Thompson River), Central Gulch (a tributary of Saint Vrain Creek), and Bummer's Gulch, Martin Gulch, and Bear Canyon Creek (tributaries of Boulder Creek in Boulder County).

² <http://ecos.fws.gov/ecp/>

Matheson et al (2010) states that “The species and its restricted habitat are at serious risk from several anthropogenic threats, including: intensifying recreational use in and around the species’ habitat; grazing adjacent to Elkhorn Creek; timber and forest stand management practices impacting the riparian zone of Elkhorn Creek; management actions for the mountain pine beetle (*Dendroctonus ponderosae*) infestation in Roosevelt National Forest, including pesticide application close to water bodies connected to Elkhorn Creek; dewatering; sedimentation and runoff from roads and trails; and seepage from residential and destination resort septic systems. Additional threats are posed by hydrologic changes that are expected to be exacerbated by global climate change.”

Arkansas Darter (Candidate)

The Arkansas darter’s range includes sites in extreme northwestern Arkansas, southwestern Missouri, and northeastern Oklahoma, within the Neosho River watershed. In Colorado, the species is found in the Upper Arkansas, Fountain Creek, Horse Creek, Upper Arkansas at John Martin, Big Sandy Creek, Rush Creek, Black Squirrel Creek and Chico Creek drainages (Baca, Bent, Cheyenne, Crowley, Elbert, El Paso, Fremont, Huerfano, Kiowa, Los Animas, Lincoln, Otero, and Prowers counties). Their distribution has not changed significantly based on comparisons of historic data, particularly since 1979. The Arkansas darter prefers shallow, clear, cool water, sand or silt bottom streams with spring-fed pools and abundant rooted aquatic vegetation. During late summer low-water periods when streams may become intermittent, Arkansas darter populations in Colorado persist in large, deep pools.

Arkansas darters may spawn throughout spring and summer. Spawning takes place in shallow water over a bottom of coarse gravel. Darters are sexually mature in one year or less. Eggs are usually deposited in open areas, on organic material that covers a sandy streambed.

Threats to the Arkansas darter include stream dewatering resulting from groundwater pumping in the western portion of the species’ range, and potential development pressures in portions of its eastern range. These conditions can be exacerbated by localized drought. Spills and runoff from confined animal feeding operations also potentially affect the species range-wide.

Bonytail Chub (Endangered)

Historically, the bonytail chub was reported as widespread and abundant in rivers throughout the Colorado River basin. The fish presently occurs in the wild by only a low number of old fish (i.e. ages 40 years or older), and recruitment is virtually nonexistent. In the Lower Colorado River basin, a small population exists in the Colorado River in Lake Mohave. In the Upper Colorado River basin, there have been captures from Dinosaur National Monument on the Yampa River, Desolation and Gray Canyon on the Green River and Black Rocks and Cataract Canyon on the Colorado River.

The bonytail chub is adapted to the main stem of rivers. It has been observed in pools and eddies and appears to prefer eddies, pools, and backwaters near swift currents in large rivers. Spawning has never been documented in a river but it has been reported that spawning occurs in June and July at water

temperature of about 64 degrees F. Bonytail chub are opportunistic feeders eating insects, zooplankton, algae, and higher plant matter.

Portions of the Colorado, Green, and Yampa Rivers in the Upper Colorado River basin and the Colorado River in the Lower Colorado River Basin were designated as critical habitat for the bonytail chub in 1994. These designated segments total 312 river miles. Of the total mileage, 59 miles occur in Moffat County, CO on the Yampa River from the boundary of Dinosaur National Monument to the confluence with the Green River. Water depletions from any portion of the occupied drainage basin are considered to adversely affect or adversely modify the critical habitat of the endangered fish species, and must be evaluated with regard to the criteria described in the pertinent fish recovery programs.

Humpback Chub (Endangered)

The present distribution of the humpback chub includes: 1) Little Colorado River, AZ; 2) Colorado River in Marble and Grand Canyons, AZ; 3) Colorado River in Cataract Canyon, Garfield and San Juan counties UT; 4) Colorado River in Black Rocks, Mesa County CO and Westwater Canyon, Grand County UT; 5) Green River in Desolation and Gray Canyons, Carson and Uintah counties UT; 6) Green River in Dinosaur National Monument, Moffat County CO, and Uintah County UT; and 7) Yampa River in Dinosaur National designations Monument, Moffat County CO. In addition to the counties of present distribution, the humpback chub is also listed as endangered in Mesa and Saguache counties CO.

Critical habitat for the humpback chub is designated for portions of the Colorado, Green, and Yampa Rivers in the Upper Colorado River Basin and the Colorado and Little Colorado Rivers in the Lower Colorado River Basin. The designated reaches total 379 river miles. Of the total mileage, 59 miles occur in Moffat County CO. Water depletions from any portion of the occupied drainage basin are considered to adversely affect or adversely modify the critical habitat of the endangered fish species, and must be evaluated with regard to the criteria described in the pertinent fish recovery programs.

Humpback chub are found in a variety of habitats including pools, riffles, eddies, boulder-strewn canyons, rocky runs, rapids, and travertine dams. This diversity of habitat use suggests that the adult fish move between habitats presumably in response to seasonal habitat changes and life history needs. Reduced spring peak flows, availability of shoreline eddy, and deep canyon habitats and competition and predation by nonnative fish have been reported as potential limiting factors for humpback chub in the Yampa River. Various studies have indicated that humpback chub spawn generally in May and June at water temperatures ranging from 52 to 73 degrees F. They are generally bottom feeders that feed on diatoms as well as small invertebrates such as planktonic crustaceans. They also have been observed feeding on terrestrial invertebrates such as adult mayflies and Mormon crickets.

Colorado Pikeminnow (Endangered)

Natural populations of the Colorado pikeminnow are restricted to the Upper Colorado River Basin in WY, CO, UT, and NM. While they have been reintroduced in several areas, the pikeminnow appears to be extirpated in the wild from all AZ waters, except above Glen Canyon Dam in Lake Powell. The Colorado pikeminnow is believed to or known to occur in Delta, Garfield, Mesa, Moffat, Montezuma,

Rio Blanco, Rio Grande, and Saguache counties, CO. Critical habitat for the Colorado pikeminnow has been designated in portions of the Colorado, Green, Yampa, White and San Juan Rivers in the Upper Basin. The reaches total 1,148 river miles. Of the total mileage, 362 of these miles occur in Delta, Garfield, Mesa, Moffat, Rio Blanco counties CO. Water depletions from any portion of the occupied drainage basin are considered to adversely affect or adversely modify the critical habitat of the endangered fish species, and must be evaluated with regard to the criteria described in the pertinent fish recovery programs.

Colorado pikeminnow are adapted to rivers with seasonally variable flow, high silt loads and turbulence. Young-of-year, juveniles, and subadults live in shallow backwater waters with little or no current, over silt and sand bottoms. Adults are larger river fish found in a variety of depths and velocities over silt, gravel, and boulder substrates depending upon season, streamflow water temperature and availability. Studies have shown that spawning migrations in the upper Green River basin were initiated at water temperatures between 57-68 degrees F and spawning occurred at temperature between 59-82 degrees F while migrations were initiated in the Yampa River from May 12 to June 10 with water temperature of about 57 degrees F and spawning occurred at 70 degrees F. Other studies found that spawning occurred between late June and mid-August when water temperature reached 64-77 degrees F. Food of young Colorado pikeminnow consists mainly of zooplankton and insect larvae. Juvenile and adults feed almost exclusively on other fish, both native and nonnative, although they will eat animals other than fish when the opportunity arises.

Greenback cutthroat trout (Threatened)

Historically, the greenback cutthroat trout is the only trout endemic to the headwaters of the South Platte and Arkansas River drainages within Colorado and a small segment of the South Platte drainage within WY. The exact historical distribution of the species is not known. The greenback is listed as threatened in Boulder, Clear Creek, Custer, Delta, Douglas, Eagle, El Paso, Garfield, Grand, Gunnison, Huerfano, Lake, Larimer, Mesa, Montezuma, Montrose, Ouray, Park, Pitkin, Pueblo, Routt, and Summit counties CO. Greenback cutthroat trout require clear, swift-flowing mountain streams with cover such as overhanging banks and vegetation. Riffle areas are used for spawning. Juveniles tend to shelter in shallow backwaters until large enough to fend for themselves in the mainstream.

The decline of the greenback cutthroat trout is attributed to anthropological influences leading to habitat loss, modification, water diversion, water pollution, and sedimentation. However, the major factor in the decline of the greenback cutthroat was the introduction of nonnative salmonid species (rainbow trout, brook trout, brown trout and Yellowstone cutthroat trout), within the South Platte and Arkansas River drainages. No critical habitat designations have been published for the greenback cutthroat trout.

Pallid Sturgeon (Endangered)

The historic range of the pallid sturgeon included the Missouri River and the Mississippi River downstream of the junction with the Missouri River. The pallid sturgeon experienced a dramatic decline throughout its range since the mid to late 1960's. The pallid sturgeon was listed as an endangered species throughout its range on September 6, 1990 (55 FR 36641 36647). Within its historic range, the pallid

sturgeon has been restricted due to major alterations of natural river dynamics through channelization and the construction of dams, dikes and levees. The species decline corresponds with commercial harvest and extensive developments on both the Missouri and Mississippi Rivers that have resulted in habitat modification, reduced normal fish migration patterns, and reductions in water quality, including dissolved oxygen and temperature. These disturbances are believed to have reduced available spawning grounds for a species which only spawn every 2 to 3 years. The pallid sturgeon is an opportunistic feeder which consumes primarily aquatic insects, but also crustaceans, mollusks, annelids, eggs of other fish as well as smaller fish.

The pallid sturgeon is not known to occur in CO and only needs to be considered if water-related activities/use in the N. Platte, S. Platte and Laramie River Basins may affect listed species in Nebraska. Critical habitat has not been designated for the pallid sturgeon due to insufficient data on the areas critical to its survival.

Razorback Sucker (Endangered)

The razorback sucker was once widely distributed and abundant in the mainstem and the major tributaries of the Colorado River basin including the Colorado, Green, and San Juan River basins in the Upper Colorado River Basin. In the upper basin, adults and larvae are widely distributed in the green River basin. The largest concentration in the upper Green River is in a reach that extends from the mouth of the Duchesne River upstream of the lower 4 miles of the Yampa River. A small reproducing population of razorback suckers exists in the Lower Green River. Although the species regularly occurs in the lower Yampa River, it is rarely found upstream as far as the Little Snake River. In the upper Colorado River, most razorback suckers have occurred in the Grand Valley in CO. They also have been captured in the mainstem Colorado River downstream of the Green River confluence including Cataract Canyon and in Lake Powell. The razorback sucker is listed as endangered in Delta Garfield, Mesa, Moffat, Montezuma, Rio Grande, Saguache counties, CO.

Critical habitat has been designated for portions of the Green, Yampa, Duchesne, Colorado, White, Gunnison and San Juan rivers in the Upper Colorado River Basin. In the Lower Colorado River Basin, portions of the Colorado, Gila, Salt and Verde rivers are designated. The designated reaches total 1,724 river miles. Of these miles, 217 miles occur in Colorado.

Razorback suckers in the Green River basin spawn in the spring with rising water levels and increasing water temperatures. They move into flooded areas in early spring and begin spawning migrations to specific locations as they become reproductively active. Spawning occurs over rocky runs and gravel bars. In non-reproductive periods, adults occupy a variety of habitats including impounded and riverine areas, eddies, backwaters, gravel pits, flooded bottoms, flooded mouths of tributary streams, slow runs, sandy riffles, and other habitats. Most studies indicate that the larvae prefer shallow, littoral zones for a few weeks after hatching and then disperse to deeper waters. Their diet varies depending on life stage, habitat and food availability. The diet of adult razorback suckers consists primarily of aquatic insects along with algae, detritus, and inorganic material. The diet of reservoir-dwelling adults is dominated by planktonic crustaceans as well as some algae and detritus.

Aquatic-dependent Species

Whooping Crane (Endangered)

Whooping cranes presently exist in three populations: the historic Aransas-Wood Buffalo population; an experimental population of released non-migratory birds in central Florida; and another experimental population of migratory birds which were led the fall of 2001 by ultralight aircraft from Necedah National Wildlife Refuge in Wisconsin to Chassahowitzka National Wildlife Refuge in Florida. The Wood Buffalo population migrates from Canada primarily through northeast Montana, North and South Dakota, Nebraska, Kansas, Oklahoma, and Texas wintering along the Texas coast. The Whooping Crane is known to fly through Montana during both spring and fall migration. Many of the recorded observations in the state indicate spring migration dates beginning as early in the year as April and fall departure dates occurring as late as the end of October. The July 2010 total wild population was estimated at 383 and the total wild and captive whooping cranes was estimated at 535.

Whooping cranes require open exposed wetlands, prairie potholes, or freshwater marshes. They seek shallow lakes and lagoons containing small islands of cattails, bulrushes, and sedges. They are omnivorous birds with a diet of insects, crustaceans, small mammals, frogs, and berries. Their diet is often supplemented with roots and grains from fields adjacent to wetlands.

Only experimental populations of whooping crane are known to occur in CO. The whooping crane only needs to be considered if water-related activities/use in the N. Platte, S. Platte and Laramie River Basins may affect listed species in Nebraska. The final critical habitat rule for the whooping crane was published in the May 15, 1978 Federal Register and included designations in Colorado, Idaho, Kansas, Nebraska, New Mexico, Oklahoma, and Texas; however the CO designations were not recognized by the 2016 IPac Trust Resources FWS Report (US FWS 2016).

Colorado butterfly plant (Threatened)

The Colorado butterfly plant is an early successional plant (although probably not a pioneer) adapted to use stream channel sites that are periodically disturbed. It occurs on subirrigated, alluvial (stream deposited) soils on level or slightly sloping floodplains and drainage bottoms at elevations of 1,524–1,951 meters (5,000–6,400 feet). Colonies are often found in low depressions or along bends in wide, active, meandering stream channels a short distance upslope of the actual channel. The plant requires early-to mid-succession riparian (river bank) habitat. It commonly occurs in communities dominated by *Agrostis stolonifera* (redtop) and *Poa pratensis* (Kentucky bluegrass) on wetter sites, and *Glycyrrhiza lepidota* (wild licorice), *Cirsium flodmanii* (Flodman's thistle), *Grindelia squarrosa* (curlytop gumweed), and *Equisetum laevigatum* (smooth scouring rush) on drier sites. Both these habitat types are usually intermediate in moisture between wet, streamside communities dominated by sedges (*Carex* spp.), rushes (*Juncus* spp.), and cattails (*Typha* spp.), and dry, upland shortgrass prairie. Typical Colorado butterfly plant habitat is open, without dense or overgrown vegetation. *Salix exigua* (coyote willow) and *Cirsium arvense* (Canada thistle) may become dominant in habitats that are not periodically flooded or otherwise disturbed. The plant occurs on soils derived from conglomerates, sandstones, and tuffaceous

mudstones and siltstones of the Tertiary White River, Arikaree, and Oglalla Formations. These soils are common in eastern Colorado and Wyoming.

The Colorado butterfly plant is listed as threatened in Boulder, Broomfield, Douglas, Jefferson, Larimer, Weld counties CO.

Yellow-billed cuckoo (Western U.S. DPS, Threatened)

Yellow-billed cuckoos are riparian obligate species that forage primarily on large insects in the canopy. Caterpillars are their primary prey, yet their diet can be supplemented with beetles, ants, spiders, cicadas, katydids, and crickets, and even frogs and lizards. In summer and fall, cuckoos forage on small wild fruits, including elderberries, blackberries and wild grapes. In winter, fruit and seeds may become a larger part of the diet.

The western distinct population segment of the yellow-billed cuckoos were listed as threatened in 2014 (70 FR 59992, October 3, 2014). The historic distribution of the western yellow-billed cuckoo included riparian habitat from to British Columbia to central Mexico. The yellow-billed cuckoo is listed in 26 counties on the Yampa, Colorado, Gunnison, Rio Grande, and Dolores river basins (western half of CO). Critical habitat designations were proposed for the yellow-billed cuckoo in 2014 and include riparian areas along portions of the following CO waterbodies: Yampa, Colorado, North Fork Gunnison, Uncompahgre, Gunnison, Rio Grande and Conejos rivers, however the designations have not been finalized.

Primary stressors that have contributed to the decline of the western yellow-billed cuckoo include the loss and degradation of critical riparian habitat for nesting and pesticide exposure that has contributed to egg shell thinning.

Southwestern willow flycatcher (Endangered)

The breeding range of the southwestern willow flycatcher includes southern CA, AZ, NM; extreme southern portions of NV and UT, extreme southwest CO and western TX. It winters in southern Mexico and Central America. This species is listed in Alamosa, Archuleta, Conejos, Costilla, Dolores, Hinsdale, La Plata, Mineral, Montezuma, Ouray, Rio Grande, Saguache, San Juan, San Miguel counties in CO. While this species may or may not be considered aquatic-dependent, it is found most frequently in riparian habitats, especially in areas of dense willows. They also nest in non-native dominated vegetation such as salt cedar. The flycatcher feeds almost entirely on insects and usually breeds near open water, springs, marshy seeps or saturated soils. The major factor in the decline of the southwestern willow flycatcher is likely the alteration/loss of the riparian habitat necessary for the species.

In 2005, 737 stream miles or 120,824 acres of critical habitat were designated in AZ, CA, NM, NV, and UT, which included critical habitat designations in Washington County, UT. In 2013, the Service revised the critical habitat to 1,227 stream segment miles, with the lateral extent including the riparian areas and streams that occur within the 100-year floodplain or flood-prone areas encompassing a total

area of approximately 208,973 acres. The revised critical habitat designations include portions of the Conejos and Rio Grande rivers in Alamosa, Costilla and Conejos counties, CO.

Ute Ladies'-tresses (Threatened)

The Ute ladies'-tresses is an orchid that occurs in relatively low elevation riparian, spring, and lakeside wetland meadows in 3 general areas: 1) near the base of the eastern slope of the Rocky Mountains in southeastern and central WY, north central and central CO and MT; 2) in the upper Colorado River basin, particularly in the Uinta Basin; and 3) along the Wasatch Front and westward in the eastern Great Basin in north-central and western UT and extreme eastern NV. In CO, the Ute ladies'-tresses is listed in Adams, Arapahoe, Boulder, Broomfield, Denver, Douglas, Eagle, El Paso, Garfield, Jefferson, Larimer, Moffat, Morgan, Pitkin, and Weld counties. This species is threatened primarily by habitat loss and modification, though its small and low reproduction rate also make it vulnerable to other threats. No critical habitat designations have been published for the Ute ladies'-tresses.

Preble's Meadow Jumping Mouse (Threatened)

Preble's meadow jumping mouse is a small rodent in the Zapodidae family and is one of 12 recognized subspecies of *Z. hudsonius*, the meadow jumping mouse. This species has a body length of 3 to 4 inches, a bicolored tail 4 to 6 inches in length, large hind feet adapted for jumping, and a distinct dark stripe down the middle of its back bordered on either side by gray to orange-brown fur. Their diet consists of seeds, fruits, fungi, and insects.

Preble's meadow jumping mouse exhibits a preference for lush vegetation along watercourses or herbaceous understories in wooded areas near water. The mouse occurs in low undergrowth consisting of grasses or forbs; in wet meadows and riparian corridors; or areas where tall shrubs and low trees provide adequate cover. The species uses upland habitats as far as 330 feet beyond the 100-year floodplain. In Wyoming, Preble's meadow jumping mouse is listed in Adams, Arapahoe, Boulder, Broomfield, Denver, Douglas, Elbert, El Paso, Jefferson, Larimer, Morgan, Teller, and Weld counties, CO.

Final critical habitat designations for the Preble's meadow jumping mouse were published in 2003, revised in 2009, and further revised in 2010. All critical habitat designations occur in Colorado. Critical habitat includes the riparian areas associated with portions of the North Fork of the Cache la Poudre River, Cache la Poudre River, Buckhorn Creek, Cedar Creek South Boulder Cree, Rocky Flats Site, Ralston Creek, Cherry Creek, West Plum Creek, Upper South Platte River and Monument Creek, totally 411 stream miles.

New Mexico Jumping Mouse (Endangered)

The New Mexico meadow jumping mouse (jumping mouse) is endemic to NM, AZ, and a small area of southern CO. The jumping mouse is a habitat specialist. It nests in dry soils, but uses moist, streamside, dense riparian/wetland vegetation up to an elevation of about 8,000 feet. Habitat requirement for the New Mexico jumping mouse include riparian communities along rivers and streams, springs and wetlands, or canals and ditches and adjacent floodplain and upland areas extending approximately 100

m (330 ft) outward from the boundary between the active water channel and the floodplain. It is listed as endangered in Archuleta, Conejos, Costilla, La Plata, Los Animas, Montezuma counties, CO.

Final critical habitat designations were published in 2016 which includes an area of approximately 5,657 hectares (13,973 acres) along 272.4 kilometers (169.3 miles) of flowing streams, ditches, and canals. Of the total area, 443 hectares is designated in Las Animas, Archuleta, and La Plata counties in Colorado.

Least Tern (Endangered)

The least tern was historically abundant in the Mississippi River basin, but has been eliminated from most stretches of the Mississippi River and its tributaries. Alteration of natural river dynamics has caused unfavorable vegetational succession on river islands and banks, curtailing their use as nesting site by terns. Its breeding biology requires 1) the presence of bare or nearly bare alluvial islands or sand bars, 2) the existence of favorable water levels during the nesting season, and 3) the availability of food.

The least tern interior population is known to or is believed to occur in 25 counties in the South Platte River and Arkansas River basins. Adults arrive in Colorado in May and initiate nesting between late May and early July. Most young leave the nest by mid August, and most birds leave the state by mid September.³ Critical habitat has not been designated for the least tern.

Piping Plover (Threatened)

The breeding range of the piping plover extends throughout the northern Great Plains, the Great Lakes and the Atlantic Coast in the U.S. and Canada. The Northern Great Plains and Atlantic Coast populations of the piping plover are threatened species, whereas the piping plover in the Great Lakes area is an endangered species. Piping plovers breed in open, sparsely vegetated areas with alkali or unconsolidated substrates. The Great Plains population nests on barren sand and gravel shores of rivers and lakes. Piping plovers feed primarily on exposed beach or gravel substrates and eat insects, spiders, and crustaceans.

The decline of the piping plover populations is primarily related to commercial, residential and recreational development in and surrounding breeding habitat and hydro modifications that disrupt the natural disturbance cycle. Too much water in the spring will flood nests and too little water over long periods of time will allow the establishment of grasses and other vegetation, making habitat unsuitable for nesting.

Piping Plovers arrive in Colorado in late April, and initiate nesting in early May, although they may re-nest after failed nests through July. Most birds will leave the state by the end of September to spend the winter in the southern and southeastern states along the Atlantic and Gulf coasts. Critical habitat for the piping plover was designated in the September 11, 2002, Federal Register, and included designations in the states of Minnesota, Montana, Nebraska, North Dakota and South Dakota.

³ Colorado Partners in Flight. 2000. Colorado Land Bird Conservation Plan
<http://www.rmbo.org/pif/bcp/phy36/shore/lete.htm>

Terrestrial Species

The actions evaluated in this memo include revisions to the WQS for specific individual segments in Colorado. The EPA has considered each of the terrestrial species listed in Table 1 and concludes that none of the species have any part of their life stages as water-breathing organisms (aquatic) and for none of the species does a meaningful amount of their diet include aquatic organisms (aquatic-dependent).⁴ The EPA has determined that this action has no effect on the terrestrial species as set forth below.

None of the terrestrial invertebrate and plant species may be affected by the EPA's water quality standards action because they each occupy upland habitats, are not aquatic or aquatic-dependent, and therefore are not exposed to the aquatic resource. The EPA has determined that this action has **NO EFFECT** on each of these terrestrial plant and invertebrate species and they will not be addressed further in this memo.

None of the terrestrial mammal and bird species may be affected by the new or revised water quality standards because they are not aquatic or aquatic-dependent, and as such do not inhabit the aquatic system and would therefore not be exposed to any possible effects from these actions. The only possibilities for exposure to the effects of this action include potential alterations to the aquatic prey base that would be exploited by carnivores (lynx and owl) and potential concerns associated with bioaccumulative pollutants. The EPA has determined the new or revised water quality standards are protective of aquatic life. Since the new or revised water quality standards are not limiting to aquatic life, then the prey base available to these species would be unchanged. In addition, since none of these species rely on aquatic resources for a substantial portion of their diet, potential effects associated with bioaccumulative pollutants are not a concern. The EPA has determined that this action has **NO EFFECT** on each of these mammal and bird species and they will not be addressed further in this memo.

⁴ Species are considered aquatic if at least one of their life stages is spent as a water-breathing organism (i.e., organisms whose respiratory oxygen is gained from that dissolved in the water column). Accordingly, organisms that have a water-breathing stage but later become air-breathers are treated as aquatic species. Species are considered aquatic-dependent if they are not water-breathing organisms, but if a meaningful amount of their diet includes aquatic organisms and/or habitat includes aquatic ecosystems. A terrestrial species, on the other hand, is a species that will have only limited exposure to "waters of the United States" (*Draft Framework for Conducting Biological Evaluations of Aquatic Life Criteria*, EPA, 2006).

III. ACTIONS NOT SUBJECT TO ESA CONSULTATION

The EPA has concluded that its approval of the WQS revisions listed in Table 2 is not subject to consultation under Section 7 of the ESA. The basis for the EPA's conclusion is summarized in Table 2 and discussed below. Specific details on the revisions can be found in the enclosures for the action letter.

Table 2: EPA Approval Actions Not Subject To ESA Consultation.

CO Reg.	Description	EPA Action	Reason(s) Not Subject to ESA Consultation*					
			1	2	3	4	5	6
34	Antidegradation designations	Approval		x				
	Recreation classifications and standards	Approval		x				
	Water supply use classifications and health-based standards	Approval		x				
	Temporary modifications (water supply use)	Approval		x				
	Agriculture classifications and standards	Approval		x				
	Total phosphorus standards assigned to river/stream and warm lake segments	No Action						x
35	Antidegradation designations	Approval		x				
	Recreation classifications and standards	Approval		x				
	Water supply use classifications and health-based standards	Approval		x				
	Temporary modifications (water supply use)	Approval		x				
	Agriculture classifications and standards	Approval		x				
	Total phosphorus standards assigned to river/stream and warm lake segments	No Action						x
*1) Disapproval action, 2) EPA has no discretion, 3) Requires additional rule change, 4) No occurrence of listed or candidate species or no effect, 5) Non-substantive, 6) EPA is not acting								

Reason #1 - Disapproval Actions

There are no revisions that fit this category.

Reason #2 - Actions Where EPA Lacks Discretion

This category of revisions generally includes those new or revised water quality standards that do not pertain to protection of aquatic or aquatic-dependent species (e.g., human health, agriculture) or where the EPA otherwise lacks discretion (e.g., antidegradation). Pursuant to 50 CFR § 402.03, which limits Section 7 consultation requirements to actions over which “there is discretionary Federal involvement or control,” the EPA’s action on such revisions is not subject to consultation under section 7 of the ESA.

Antidegradation

The basis for the EPA’s conclusion that approval of antidegradation revisions is not subject to ESA consultation is discussed in “Antidegradation Policy Approvals and Endangered Species Act Consultations”, Memorandum from Geoff Grubbs, Director, Office of Science and Technology, to Water Management Division Directors, Regions 1 - 10, January 27, 2005.

WQS revisions in this category include:

- Removal of the Use Protected designation was removed from Piedra River segment 6a (tributaries to the Piedra River below the confluence with Devil Creek).
- Addition of the Outstanding Waters designation for the Raggeds Wilderness Area, which was added to the description of Upper Gunnison segment 1
- Addition of the Use Protected designation to San Miguel segments 12b and 12c.

Human Health (Recreation and Water Supply Water Quality Standards)

This category of revisions generally includes all revisions to designated uses that are directly related to protection of human health (e.g., water supply), all numeric criteria for the protection of human health, including those assuming human consumption of water and/or those assuming human ingestion of aquatic organisms, all revisions to recreation uses, and all revisions to the numeric criteria for the protection of recreation uses. The revisions in this category relate solely to the protection of human health uses. They are not material to the level of protection needed to ensure protection of listed or proposed, endangered or threatened species. Rather, the state/tribe has an independent duty to adopt WQS that would protect such species. Accordingly, in determining whether to approve or disapprove the revisions in this category under the CWA, the EPA's discretion is limited to determining whether the revisions ensure protection of human health. Because consideration of effects on listed or proposed, endangered or threatened species is not within the EPA's discretion, the EPA's action on the revisions in this category is not subject to the requirements of section 7(a)(2) of the ESA. The EPA will continue to consider effects to listed species in the context of its review of standards adopted to protect aquatic life. EPA approval of human-health based water quality standards does not relieve the state/tribe of its responsibility to protect other uses (e.g., aquatic life), particularly where available information is sufficient to allow derivation of protective criteria.

WQS revisions in this category include:

- Application of a new recreation-based chlorophyll-a numeric standard to various segments.
- Changes to water supply use classifications and numeric standards.
- Application of arsenic (water supply use) temporary modifications to various segments.

Agricultural Water Quality Standards

The EPA's approval of water quality standards that are directly related to protection of agricultural uses is not subject to ESA consultation. Agricultural water quality standards, including designated uses and narrative and numeric criteria, focus on the protection of irrigation and/or livestock watering and do not evaluate the sensitivity of aquatic or aquatic-dependent species. Rather, the State has an independent duty to adopt water quality standards that would protect aquatic life use designations. Accordingly, in determining whether to approve or disapprove the revisions in this category under the CWA, the EPA's discretion is limited to determining whether the revisions ensure protection of agricultural uses. Because consideration of effects on listed or proposed, endangered or threatened species is not within the EPA's discretion, the EPA's intended action on the revisions in this category is not subject to the requirements of section 7(a)(2) of the ESA. The EPA will continue to consider effects to listed species in the context of its review of standards adopted to protect aquatic or aquatic-dependent species.

WQS revisions in this category include:

- Application of a molybdenum standard of 150 µg/L to various segments for protection of agriculture uses.

Reason #3 - Actions That Require Additional Rule Change

There are no revisions that fit this category.

Reason #4 - No Occurrence of Listed or Candidate Species

There are no revisions that fit this category.

Reason #5 - Non-Substantive Revisions

There are no revisions that fit this category.

Reason #6 - EPA is Not Acting

This category includes new or revised WQS where the EPA is not taking an action pursuant to CWA § 303(c) at this time. WQS revisions in this category include:

- All segment-specific total phosphorus (TP) numeric standards based on the interim value for river/stream segments with a cold water aquatic life classification (110 µg/L TP) or a warm water aquatic life classification (170 µg/L TP); and
- All segment-specific TP numeric standards based on the interim value for lake/reservoir segments with a warm water aquatic life classification (83 µg/L TP).

IV. ACTIONS APPROVED SUBJECT TO ESA CONSULTATION

By email dated October 16, 2017, the ESA Section 7(a)(2) informal consultation process with the Service was initiated for the revisions to Colorado's WQS. The EPA intends to approve the revisions identified below subject to completion of the ESA consultation.

Changes to Aquatic Life Use Classifications

- The aquatic life use classification was upgraded for all or a portion of: Animas and Florida segment 3a (a portion of the Animas River was moved from segment 2, which has no aquatic life use assigned, to segment 3a, which is Aquatic Life Cold 1), Dolores River segment 9 (lower Silver Creek was upgraded from Aquatic Life Cold 2 to Aquatic Life Cold 1), and San Juan River segment 11c (McCabe Creek was upgraded from Aquatic Life Warm 1 to Aquatic Life Cold 1).
- The aquatic life use was changed from Aquatic Life Cold 1 to Aquatic Life Warm 1 for Dolores River Segment 11c based on the conclusions of a use attainability analysis.
- A revised aquatic life use was adopted for Uncompahgre segment 15b (Cold 2 to Warm 2), Lower Gunnison segments 5b, 6b, and 6c (Cold 1 to Warm 1), and San Miguel segments 10b (Cold 1 to Warm 1), 12b (Cold 2 to Warm 2), and 12c (Cold 2 to Warm 2).

Revisions to Numeric Standards for the Protection of Aquatic Life Classifications

- Numeric standards for metals
- Numeric standards for chlorophyll-a
- Numeric standards for total phosphorus (cold lakes)
- Numeric standards for water temperature

Revisions to Temporary Modifications (Aquatic Life Uses)

- For Animas and Florida segment 3b, the cadmium and zinc temporary modifications were deleted and the expiration date for the copper temporary modification was extended from 12/31/2017 to 12/21/2022.
- A new copper temporary modification was assigned to Animas and Florida segment 4a (expiration 12/31/2022).
- For La Plata segments 7a and 9, revisions to the ammonia temporary modifications included extending the expiration date from 6/30/2018 to 6/30/2020.
- For Upper Gunnison segment 12, new acute cadmium and copper temporary modifications were adopted (April 1 through June 30), and revisions were adopted for the chronic cadmium, copper, and zinc temporary modifications (April 1 through June 30).

Biological Evaluation

It is important to understand that for its CWA Section 303(c) action the Region has taken a conservative approach in its initial identification of new/revised WQS revisions that may be appropriate for ESA consultation. However, it is possible that certain new/revised standards listed in Table 3 will have no effect on listed species. Accordingly, it is possible that during the ESA consultation process, additional revisions will be identified as not subject to ESA consultation requirements. The EPA's biological evaluation will evaluate in greater detail the revisions to WQS that may affect listed species or their critical habitats.

V. CONCLUSION

For all of the reasons discussed in this memorandum, EPA believes its approval of certain new or revised elements of Colorado's WQS subject to the outcome of ESA Section 7(a)(2) consultation is consistent with Section 7(d) of the ESA. As described above, EPA also believes that its approval of other elements of Colorado's WQS is not subject to ESA Section 7(a)(2) requirements (Table 2).

